

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,

please do not report the images to the
Image Problem Mailbox.

In the Claims

A1 1. (Currently Amended) A method for protecting a MEMS structure during a dicing of a MEMS wafer to produce individual MEMS dies, comprising ~~the steps of~~:

- (a) preparing a MEMS wafer having a plurality of MEMS structure sites thereon;
 - (b) mounting, upon a front side of the MEMS wafer, a wafer cap to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the front side of the MEMS wafer being a same side as a side having the MEMS structure sites located thereon;
 - (c) applying a contiguous tape on a backside of the MEMS wafer, the backside of the MEMS wafer being a side opposite of a side having the MEMS structure sites located thereon;
- and
- ~~(e)~~(d) dicing the laminated MEMS wafer into a plurality of MEMS dies;
 - (e) placing a MEMS die into a package; and
 - (f) removing, after placement of the MEMS die in the package, the wafer cap.

2. (Original) The method as claimed in claim 1, wherein the laminated MEMS wafer is diced using a saw.

3. (Original) The method as claimed in claim 1, wherein the laminated MEMS wafer is diced using a laser.

4. (Original) The method as claimed in claim 1, wherein the laminated MEMS wafer is diced using scribing and breaking.

5. (Original) The method as claimed in claim 1, wherein the wafer cap is a cover tape with an adhesive medium.

A
6. (Original) The method as claimed in claim 1, wherein the wafer cap includes an adhesive medium.

7. (Original) The method as claimed in claim 6, wherein the adhesive medium is an ultraviolet light releasable medium.

8. (Original) The method as claimed in claim 6, wherein the adhesive medium is a heat releasable medium.

9. (Original) The method as claimed in claim 6, wherein the adhesive medium is a combination of an ultraviolet light and heat releasable medium.

10. (Original) The method as claimed in claim 6, wherein the adhesive medium comprises a thermoplastic organic material.

11. (Original) The method as claimed in claim 6, wherein the adhesive medium comprises an ultraviolet light sensitive organic material.

12. (Original) The method as claimed in claim 6, wherein the adhesive medium comprises a solder material.

13. (Original) The method as claimed in claim 1, wherein the wafer cap is attached to the MEMS wafer through mechanical means.

14. (Original) The method as claimed in claim 1, wherein the wafer cap is attached to the MEMS wafer through bonds produced by applying the wafer cap to the MEMS wafer with a predetermined amount of pressure.

15. (Currently Amended) The method as claimed in claim 1, further comprising the step of:

~~(g)~~(d) applying a contiguous tape on a backside of the MEMS wafer, the backside of the MEMS wafer being a side opposite of a side having the MEMS structure sites located thereon.

16. (Original) The method as claimed in claim 15, wherein the contiguous tape is applied to a backside of the MEMS wafer after the wafer cap is mounted on the MEMS wafer.

17. (Original) The method as claimed in claim 15, wherein the contiguous tape is applied to a backside of the MEMS wafer before the wafer cap is mounted on the MEMS wafer.

18. (Original) The method as claimed in claim 15, wherein the contiguous tape is applied to a backside of the MEMS wafer before the laminated MEMS wafer is sawn.

19. (Original) The method as claimed in claim 15, wherein the contiguous tape is not cut when the laminated MEMS wafer is diced.

20. (Currently Amended) The method as claimed in claim 5, further comprising the step of:

~~(g)~~(d) applying a contiguous tape on a backside of the MEMS wafer, the backside of the MEMS wafer being a side opposite of a side having the MEMS structure sites located thereon.

21. (Original) The method as claimed in claim 20, wherein the contiguous tape is applied to a backside of the MEMS wafer after the wafer cap is mounted on the MEMS wafer.

22. (Original) The method as claimed in claim 20, wherein the contiguous tape is applied to a backside of the MEMS wafer before the wafer cap is mounted on the MEMS wafer.

23. (Original) The method as claimed in claim 20, wherein the contiguous tape is applied to a backside of the MEMS wafer before the laminated MEMS wafer is sawn.

24. (Original) The method as claimed in claim 20, wherein the contiguous tape is not cut when the laminated MEMS wafer is diced.

25. (Original) The method as claimed in claim 1, wherein the wafer cap comprises silicon-based material.

26. (Original) The method as claimed in claim 25, wherein the wafer cap includes an organic adhesive medium.

27. (Original) The method as claimed in claim 1, wherein the wafer cap comprises a glass-based material.

28. (Original) The method as claimed in claim 1, wherein the wafer cap comprises a ceramic-based material.

29. (Original) The method as claimed in claim 1, wherein the wafer cap comprises a polymer-based material.

30. (Original) The method as claimed in claim 1, wherein the laminated MEMS wafer is diced with a wafer saw with a wafer cap side of the laminated MEMS wafer facing towards a cutting device of the wafer saw such that the wafer cap is sawn before the MEMS wafer.

31. (Currently Amended) A method for protecting a MEMS structure during a production of individual MEMS dies, comprising ~~the steps of~~:

- (a) fabricating a MEMS wafer having a plurality of MEMS structure sites thereon;
- (b) fabricating a wafer cap;
- (c) bonding, upon a front side of the MEMS wafer, the wafer cap to the MEMS wafer to produce a laminated MEMS wafer, the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the front side of the MEMS wafer being a same side as a side having the MEMS structure sites located thereon;
- (d) applying a contiguous tape on a backside of the MEMS wafer, the backside of the MEMS wafer being a side opposite of a side having the MEMS structure sites located thereon;
- ~~(d)~~(e) dicing the laminated MEMS wafer into a plurality of MEMS dies; ~~and~~
- (f) placing a MEMS die into a package; and
- ~~(e)~~(g) removing, after placement of the MEMS die in the package, the wafer cap from the laminated MEMS wafer die.

32. (Canceled).

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Original) The method as claimed in claim 31, wherein the wafer cap includes an adhesive medium.

AI 37. (Original) The method as claimed in claim 36, wherein the adhesive medium is an ultraviolet light releasable medium.

38. (Original) The method as claimed in claim 36, wherein the adhesive medium is a heat releasable medium.

39. (Original) The method as claimed in claim 36, wherein the adhesive medium is a combination of an ultraviolet light and heat releasable medium.

40. (Original) The method as claimed in claim 36, wherein the adhesive medium comprises a thermoplastic organic material.

41. (Original) The method as claimed in claim 36, wherein the adhesive medium comprises an ultraviolet light sensitive organic material.

42. (Original) The method as claimed in claim 36, wherein the adhesive medium comprises a solder material.

43. (Canceled)

44. (Original) The method as claimed in claim 43, wherein the contiguous tape is applied to a backside of the MEMS wafer after the wafer cap is mounted on the MEMS wafer.

45. (Original) The method as claimed in claim 43, wherein the contiguous tape is applied to a backside of the MEMS wafer before the wafer cap is mounted on the MEMS wafer.

46. (Original) The method as claimed in claim 43, wherein the contiguous tape is applied to a backside of the MEMS wafer before the laminated MEMS wafer is sawn.

47. (Original) The method as claimed in claim 31, wherein the wafer cap comprises silicon-based material.

48. (Original) The method as claimed in claim 31, wherein the wafer cap comprises a glass-based material.

49. (Original) The method as claimed in claim 31, wherein the wafer cap comprises a ceramic-based material.

50. (Original) The method as claimed in claim 31, wherein the wafer cap comprises a polymer-based material.

51. (Original) The method as claimed in claim 31, wherein the laminated MEMS wafer is sawn on a wafer saw with a wafer cap side of the laminated MEMS wafer facing towards a cutting device such that the wafer cap is sawn before the MEMS wafer.

52. (Original) The method as claimed in claim 31, wherein the wafer cap is attached to the MEMS wafer through mechanical means.

53. (Original) The method as claimed in claim 31, wherein the wafer cap is attached to the MEMS wafer through bonds produced by applying the wafer cap to the MEMS wafer with a predetermined amount of pressure.

Claims 54 - 96 (Canceled)

97. (Original) The method as claimed in claim 1, wherein the wafer cap comprises a metal.

98. (Original) The method as claimed in claim 31, wherein the wafer cap comprises a metal.

Claims 99 & 100 (Canceled)

101. (Original) The method as claimed in claim 1, wherein the wafer cap comprises a static dissipative material.

102. (Original) The method as claimed in claim 31, wherein the wafer cap comprises a static dissipative material.

Claims 103 & 104 (Canceled)

105. (Original) The method as claimed in claim 15, wherein the contiguous tape comprises a static dissipative material.

106. (Currently Amended) The method as claimed in claim 3120, wherein the contiguous tape comprises a static dissipative material.

107. (Canceled)

108. (Canceled)

109. (Canceled)

A1 110. (Original) The method as claimed in claim 94, wherein the contiguous tape comprises a static dissipative material.
